Patent Claims

1. Rotor blade for gas turbine rotors for manufacturing gas turbine rotors having integral blading, comprised of a blade pan (11) and a blade footing (12) connected to the blade pan (11), **characterized in that**, the blade footing (12) is adapted by means of capacitor discharge welding to manufacture a gas turbine rotor having integral blading, said adaptation being such that the blade footing (12) is designed with a V-shaped cross section in at least some sections.

2. Rotor blade according to Claim 1, **characterized in that**, for manufacturing a gas turbine rotor having integral blading, the blade footing (12) is adapted by means of capacitor discharge stud welding.

3. Rotor blade according to Claim 1 or 2, **characterized in that,** the blade footing (12) is designed with a V-shaped cross section in an area (13) which serves to ensure contacting of the rotor and the rotor blade in capacitor discharge welding, preferably in capacitor discharge stud welding.

4. Rotor blade according to Claim 3, **characterized in that**, an acutely tapered end (14) of the area (13) having a V-shaped cross section serves to provide contact with the rotor, whereby the area has a cross section which becomes wider from the acutely tapered end (14) to the blade pan (11).

5. Rotor blade according to any one or more of Claims 1 through 4, **characterized in that,** the blade footing (12) has a cross section adapted to the introduction of pressure forces in an area (15) arranged between the blade pan (11) and the area (13) designed with a V-shaped cross section.

6. Rotor blade according to any one or more of Claims 1 through 5, **characterized in that,** the blade footing (12) has at least one projection (16, 17) for introduction of pressure force.

7. Rotor blade according to Claim 6, **characterized in that**, the projection or each projection (16, 17) extends in the longitudinal direction of the blade footing (12).

8. Rotor blade according to Claim 6 or 7, **characterized in that**, a projection (16, 17) forming a shoulder is arranged on both sides of the blade footing (12).

9. Rotor blade according to any one or more of Claims 1 through 5, **characterized in that**, the blade footing (12) has at least one groove (19, 20) for introduction of pressure force.

10. Rotor blade according to Claim 9, **characterized in that,** the groove or each groove (19, 20) extends in the longitudinal direction of the blade footing (12).

11. Rotor blade according to Claim 9 or 10, **characterized in that**, a groove (19, 20) is arranged on both sides of the blade footing (12).

12. Method for manufacturing gas turbine rotors having integral blading, whereby multiple rotor blades are mounted on a rotor mount, in particular on a disk or a ring by a welding method **characterized in that,** the rotor blades are mounted on the rotor mount by capacitor discharge welding.

13. Method according to Claim 12, **characterized in that,** the rotor blades are mounted on the rotor mount by capacitor discharge stud welding.

14. Method according to Claim 12 or 13, **characterized by**, the following steps:
    a) Manufacturing rotor blades having a blade pan and a blade footing connected to the blade pan, whereby the blade footing is adapted by capacitor discharge welding for the manufacture of a gas turbine rotor having integral blading such that the blade footing is designed with a V-shaped cross section in at least some portions,
    b) Positioning at least one rotor blade manufactured in this way on the rotor mount,
    c) Connecting the rotor blade or each rotor blade positioned on the rotor mount to at least one capacitor,
    d) Introducing a current through the area or each area having a V-shaped cross section of the rotor blade or each rotor blade by discharge of the capacitor or each capacitor, whereby the rotor blade or each rotor blade is hereby welded to the rotor mount,
    e) Machining off thickened areas and/or protruding material and/or welding notches to the final contours of the gas turbine rotors having integral blading.

15. Method according to Claim 14, **characterized in that**, the rotor blade or each rotor blade in the positioning according to step b) comes in contact with an acutely tapered end of the area having a V-shaped cross section, said area expanding in cross section from the acutely tapered end to the blade pan.

16. Method according to Claim 14 or 15, **characterized in that**, in welding according to step d) a pressure force is applied to the rotor blade or each rotor blade simultaneously.

17. Method according to Claim 14, 15 or 16, **characterized in that**, the thickened area and/or protruding material and/or welding notches according to step e) are machined off by milling or by electrochemical machining.

18. Method according to any one or more of Claims 12 through 17, **characterized in that,** rotor blades according to one or more of Claims 1 through 11 are used.